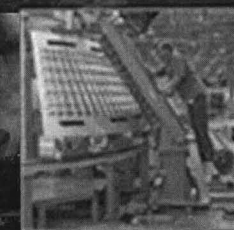
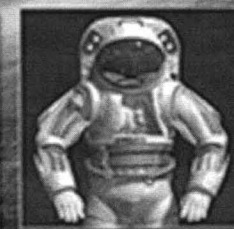
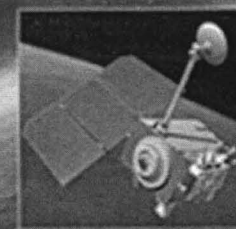
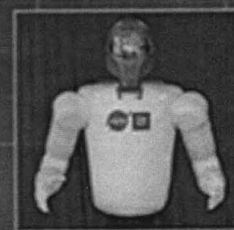


Small Business Innovation Research (SBIR) Small Business Technology Transfer (STTR) Overview

Brenda Penn
KSC's Technology Infusion Manager
Jennifer Van Pelt
SBIR/STTR Program Specialist





NASA SBIR/STTR Program

- The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs provide an opportunity for small, high technology companies and research institutions (RI) to participate in Government sponsored research and development (R&D) efforts in key technology areas.

If you are a small business concern with 500 or fewer employees, or a non-profit RI, such as a university or a research laboratory with ties to an SBC, then NASA encourages you to learn more about these programs and significant sources of seed funding for the development of your innovations.



Reauthorization of the SBIR and STTR Programs

- The SBIR/STTR programs provide more than \$2 billion of R&D funding to innovative small business across a broad range of technologies. After a long series of temporary reauthorizations, Congress voted to reauthorize the program and the President signed the bill into law on December 31, 2011.
- The Small Business Administration (SBA) must translate the laws into more detailed regulations and directives that govern how the program will work and will be administered.



Reauthorization of the SBIR and STTR Programs

- The Agency drafts a proposed rule or amendments to a directive.
- The proposed rule and amendments to the directive are published in the Federal Register and posted on <http://www.regulations.gov> for a 60-day public comment period. You must submit your comments on or before October 5, 2012.
- The Agency reviews and considers all comments and modifies rules or directives as appropriate.
- The final rule or directive is published, including SBA's response to comments and an effective date.



Reauthorization of the SBIR and STTR Programs

- **Section 101-** Amends the Small Business Act to reauthorize through FY 2019 the SBIR and STTR programs of the Small Business Administration (SBA).
- **Section 106-** Allows a small business that receives a SBIR award from one agency to receive an award for a subsequent phase from another agency as long as the head of each agency determines that the topics of the relevant awards are the same.
- **Section 308-** Requires the SBA to include in an annual report to Congress specified information on Phase III awards issued by federal agencies participating in the SBIR/STTR Programs.
- **Section 313-** Directs the Administrator to amend the SBIR and STTR Policy Directives to include measures to prevent fraud, waste, and abuse in the programs.



SBIR/STTR: 3-Phase Program

- **Phase 1**
 - Feasibility study
 - \$125K award
 - 6 months duration (SBIR)
 - 12 months duration (STTR)
- **Phase 2**
 - Technology Development of a Prototype
 - 2-Year Award
 - \$750K
- **Phase 3**
 - Technology Infusion/Commercialization Stage
 - Use of non-SBIR Funds
 - Ability to award sole-source contracts without Justification for Other than Full and Open Competition (JOFOC) based on specific SBIR authority – NASA and NASA primes.



Phase 2 Enhancement (Phase 2-E)

- **NASA will match with SBIR/STTR funds up to \$250,000 of non-SBIR/non-STTR investment from a NASA project, NASA contractor, or third party commercial investor to extend an existing Phase 2 project for 4 - 12 months to perform additional research.**
- **Application packages must be submitted within the first two weeks of the 15th month of the Phase 2 contract.**

The objective of the Phase 2-E Option is to accelerate and/or increase the infusion/commercial possibilities of the Phase 2 project.

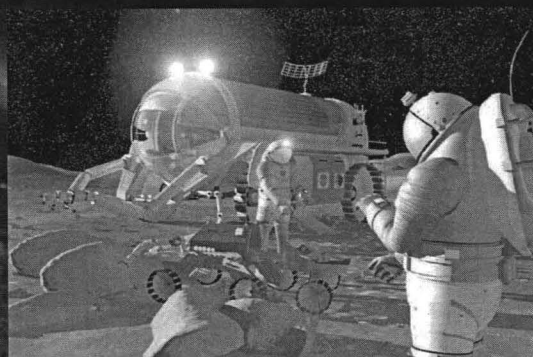


Mission Driven

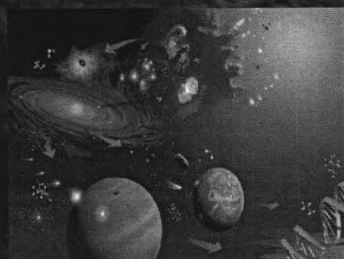
SBIR/STTR = Small Business Innovation for NASA and the Nation

Partnership with Mission Directorates Drives SBIR/STTR Investment

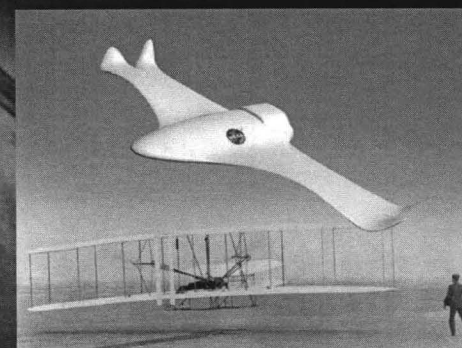
Human Exploration and Operations



Science



Aeronautics Research





FAQs

- **Does my proposal need to fit into a specific subtopic?**

Yes, proposals that do not address the solicitation may be classified as “non-responsive” and rejected. However, the subtopics are usually broadly written.

- **Is NASA interested in my technology?**

Review this year's solicitation for potential areas of interest at www.sbir.nasa.gov



NASA SBIR & STTR Program

sbir.gsfc.nasa.gov/SBIR/SBIR.html



SMALL BUSINESS INNOVATION RESEARCH SMALL BUSINESS TECHNOLOGY TRANSFER

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- SBIR Home

+ FIRST TIME PARTICIPANTS

+ PROPOSERS

+ AWARDEES

+ NASA PARTICIPANTS

+ TECHNOLOGY CONSUMERS

NEWS

+ "SBIR 2011 Phase II Proposal Submission EHB
Proposals due no later than 5:00 pm ET on the last day of the Phase I
contract.

+ 2012 SBIR/STTR Solicitation Schedule
Tentatively Planned for September 4, 2012

+ STTR 2010 Phase II Selection Announcement
Announced on April 27, 2011 at 3:00 pm EDT

+ *The Concept* SBIR/STTR Newsletter
Spring 2012 Issue Now Available

+ SBIR 2010 Phase II Selection Announcement
Announced on December 19, 2011

+ TechSource - An easy way to search funded SBIR/STTR technologies

FEATURED SITES



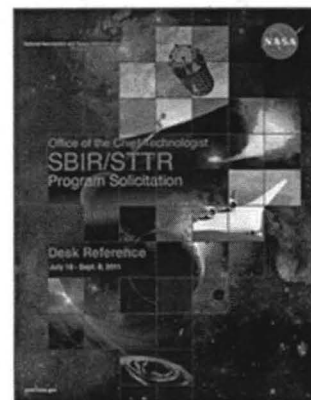
Office of the Chief Technologist



Spinoff Online - Commercialized
NASA Technologies

UPCOMING EVENTS

National SBIR Fall 2012 Conference
Portland, OR
November 13 - 15, 2012



2011 Solicitation



SBIR/STTR Funded Technology Search



SMALL BUSINESS INNOVATION RESEARCH
SMALL BUSINESS TECHNOLOGY TRANSFER

Putting Innovative Technologies to Work

NASA TechSource

[Return to NASA SBIR Home](#) | [Help](#)

Search Text:

☒ Any Word ☐ All Words ☐ Exact match ☐ Advanced [Tips for Advanced Search!](#)

Center:

Program:

Program Year:

Phase:

Results Per Page:

Sort By:

Welcome to NASA TechSource Tool

This tool allows you to perform searches on technology keywords or phrases in funded NASA SBIR/STTR projects. In addition to searching the database, this tool also searches relevant documents submitted by the firm. Note: Public access restricted to non-proprietary data only.

TechSource can be used to:

- Identify SBIR/STTR technologies that may solve a NASA or industry need;
- Provide a potential link to investment opportunities for investors and other sources of capital;
- Showcase projects in a particular technology area;
- Identify projects from a specific NASA Center, Firm, or Principal Investigator.





SMALL BUSINESS INNOVATION RESEARCH SMALL BUSINESS TECHNOLOGY TRANSFER

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+ TECHNOLOGY CONSUMERS

POPULAR LINKS

- + Recent Updates
- + Sources of Assistance
- + Program Contacts
- + National Conference

Advanced Search

Enter search term:

Search within:

2010 Solicitations

Search for results containing:

all of the words

Show results per page:

10 results

Return results where my terms occur:

anywhere in the page

Sort by:

Sort by Relevance

+ GO

Search by Firm, Program, Technology, Center or State

Instructions: This search tool provides the capability to search NASA SBIR/STTR Abstracts, Success Stories, and/or Hallmark Videos in terms of firm name, project title, program, phase, year, technology, center or state. When performing your search, choose all relevant search options to maximize your results.

You may also sort your results by firm, center, state, year, or title.

Note:

Fields marked with (1) are not applicable for Hallmark Video search

Fields marked with (2) are not applicable for Abstracts Archive search

Search within:

All of these

State:

All States
Alabama
Alaska
Arkansas
Arizona

Awarding Center:¹

All Centers
ARC
DFRC
GRC

Success Story (SS) Technology:^{1, 2}

All Technologies
Aerodynamics
Aeronautics
Aerospace
Acoustics/Vibroacoustics

Show results per page:

10 results

Firm Name (Enter the first 3-4 characters):

Title (Enter the first 3-4 characters):¹

Program:¹

☐ SBIR ☐ STTR ☒ Both

Phase:¹

☐ Phase 1 ☐ Phase 2 ☒ Both

Year:

All Years
2009
2008
2007
2006

Success Story (SS) Status:^{1, 2}

☒ Current
☐ All including Archived

Sort by:

Firm



Environmental Monitoring & Control (example)

X3.03 Monitoring and Control for Spacecraft Environmental Quality and Fire Protection

Lead Center: JPL

Participating Center(s): ARC, GRC, JSC, KSC, MSFC

Monitoring and Control Technology Needs

Long duration human missions far from Earth and operation of closed loop life support systems have critical needs for monitoring and control for environmental quality and certifying recycled life support consumables. Monitoring technologies are employed to assure that the chemical and microbial content of the air and water environment of the astronaut crew habitat falls within acceptable limits, and that the life support system is functioning properly and efficiently. The sensors may also provide data to automated control systems. All proposed technologies should have a 3 year shelf-life, including any calibration materials (liquid or gas). The technologies will need to function in microgravity and low pressure environments (~8 psi), and may see unpressurized storage. Significant improvements are sought in miniaturization and operational reliability, as well as long life, in-line operation, self-calibration, reduction of expendables, low energy consumption, and minimal operator time/maintenance for monitoring and controlling the life-support processes.

- Process control sensors for closed loop life support systems: Targeted sensors include humidity in gases such as O_2 , H_2 , and CO_2 ; volatile organic compounds in O_2 and CO_2 (VOCs in CO_2 would be in the CO_2 removal/concentration product that would feed to any CO_2 reduction process); composition of CO_2 reduction effluent gases (CO_2 , CO , CH_4 , and H_2O) from either a Sabatier- or Bosch-based CO_2 reduction process; and combustible gas sensors for H_2 in an O_2 background and O_2 in an H_2 background from electrolysis.
- Trace toxic metals in water.
- Microbial monitoring of water and surfaces using minimal consumables.
- Optimal system control methods. Operate the life support system with optimal efficiency and reliability, using a carefully chosen suite of feedback and health monitors, and the associated control system.
- Sensor suites. Develop an approach for selecting number, types and placement of sensors in a distributed network for optimal environmental monitoring. Develop an approach to efficiently analyze data from a suite of sensors within a distributed network for optimal environmental monitoring.

Spacecraft Fire Protection Technology Needs

The overheating or combustion of spacecraft materials can introduce many types of particulate and gaseous contaminants into the cabin atmosphere. Technologies that not only detect smoke particulate but identify important characteristics such as particulate size and composition would be extremely useful for rapid identification of the fire source. These must be of suitable size, mass, and volume for a distributed sensor array in spacecraft systems. Also, catalytic or sorbent technologies suitable for the rapid removal of gases, especially CO , and particulate during a contingency response are desired.



Cryogenic Fluid Management (example)

O3.07 Cryogenic Fluid Management Technologies

Lead Center: KSC

The ultimate objective of this Cryogenic Fluid Management (CFM) Technologies solicitation is to demonstrate a variety of critical CFM technologies in a micro-gravity space environment via a deployable or non-deployable test bed.

The initial phase (Phase I) will identify and develop prototype experiments that could be integrated into a universal platform for demonstration of these experiments in their relevant micro-gravity environment.

The second phase (Phase II) of this solicitation would develop a universal and innovative test bed platform that could be launched as a secondary payload on an expendable launch vehicle.

State of the art: CFM technologies are, for the most part, limited to ground tests that do not provide a complete and accurate demonstration of the technologies in their true operational environment. This increases risk in the development of emerging technologies for future applications in the areas of space based propellant depots, low gravity descent and ascent operations, and future space or planetary based architectures.

Areas of interest:

The purpose of these experiments would be to allow testing of:

- Designs for fluid and propellant transfer plumbing
- Multi-layer insulation (MLI) designs
- Various mass gauging designs
- Thermal control and boil-off control designs in a true micro-gravity space environment



Central Industry Assistance Office

The NASA Kennedy Space Center (KSC) Small Disadvantaged Business Working Group has an off-site Central Industry Assistance Office (CIAO) which serves as an outreach to private industry and a primary source of information for firms seeking business opportunities at KSC. One of the primary services offered at the CIAO are:

Joint Counseling Sessions

Allow small businesses to meet with NASA/KSC personnel, including prime contractor representatives to present their products and services.

To schedule an appointment, please call (321) 867-7353.



NASA KSC Technology Capability Areas

KSC is seeking partners in joint technology development projects and technology commercialization in the following areas:

- Storage, Distribution and Conservation of Fluids
- Materials for Life Cycle Optimization
- Life Sciences, Habitation Systems, and Human Research
- Remediation and Ecosystem Sciences
- In-Situ Resource Utilization and Surface Systems
- Life Cycle Optimization of Products, Projects, and Programs
- Space Launch and Suborbital Technologies
- Tracking, Timing, Communications (TT&C) and Navigation Technologies

<http://www.nasa.gov/offices/oct/home/roadmaps/index.html>



NASA's 14 Space Technology Roadmap Areas

<http://www.nasa.gov/offices/oct/home/roadmaps/index.html>

Technical Area

- TA01
- TA02
- TA03
- TA04
- TA05
- TA06
- TA07
- TA08
- TA09
- TA10
- TA11
- TA12
- TA13
- TA14

Space Technology Roadmaps

Launch Propulsion Systems
In-Space Propulsion Systems
Space Power and Energy Storage
Robotics, Tele-Robotics and Autonomous Systems
Communication and Navigation Systems
Human Health, Life Support and Habitation Systems
Human Exploration Destination Systems
Science Instruments, Observatories and Sensor Systems
Entry, Descent and Landing
Nanotechnology
Modeling, Simulation, Information Technology and Processing
Materials, Structures, Mechanical Systems and Manufacturing
Ground and Launch Systems Processing
Thermal Management Systems



SBIR/STTR – Eligibility Checkpoints

- Legally established and organized for profit with the place of business located in the U.S.
- Majority owned and controlled by U.S. citizens or permanent resident aliens
- Operated primarily in the U.S. or makes a significant contribution to the U.S. economy
- 500 employees or less, including any affiliates.



Submitting a Proposal

- Carefully review instructions in solicitation:
<http://sbir.nasa.gov/>.
- Search and identify specific technical areas (subtopics) and lead center(s) of your interest.
- Make sure your proposal meets the needs requested in the subtopic.
- Carefully review your file before you upload



Submission Process

- All proposals are submitted electronically via the internet
- Make sure all parts of your proposal are received on time – late proposals are rejected
- Proposals are screened for administrative completeness and turned over to the managing NASA Center for technical review





Phase 1 Proposal Review & Selection Criteria

- Proposal Review
 - Factor 1: scientific/technical merit and feasibility (50%)
 - Factor 2: experience, qualifications and facilities (25%)
 - Factor 3: effectiveness of the proposed work plan (25%)
 - Factor 4: commercial merit and feasibility
- Proposal Ranking and Selection
 - NASA Project/Mission Alignment
 - Value, Priority and Infusion Potentials
 - Innovation & commercial



SBIR/STTR Program Schedule

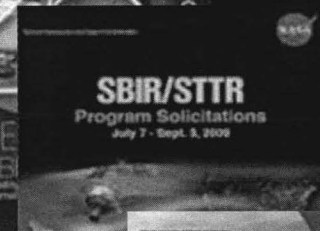
2012 Program Solicitation

- Opening Date: 09/04/2012
- Closing Date: 10/08/2012
- Selections: January 2013

<http://sbir.nasa.gov>

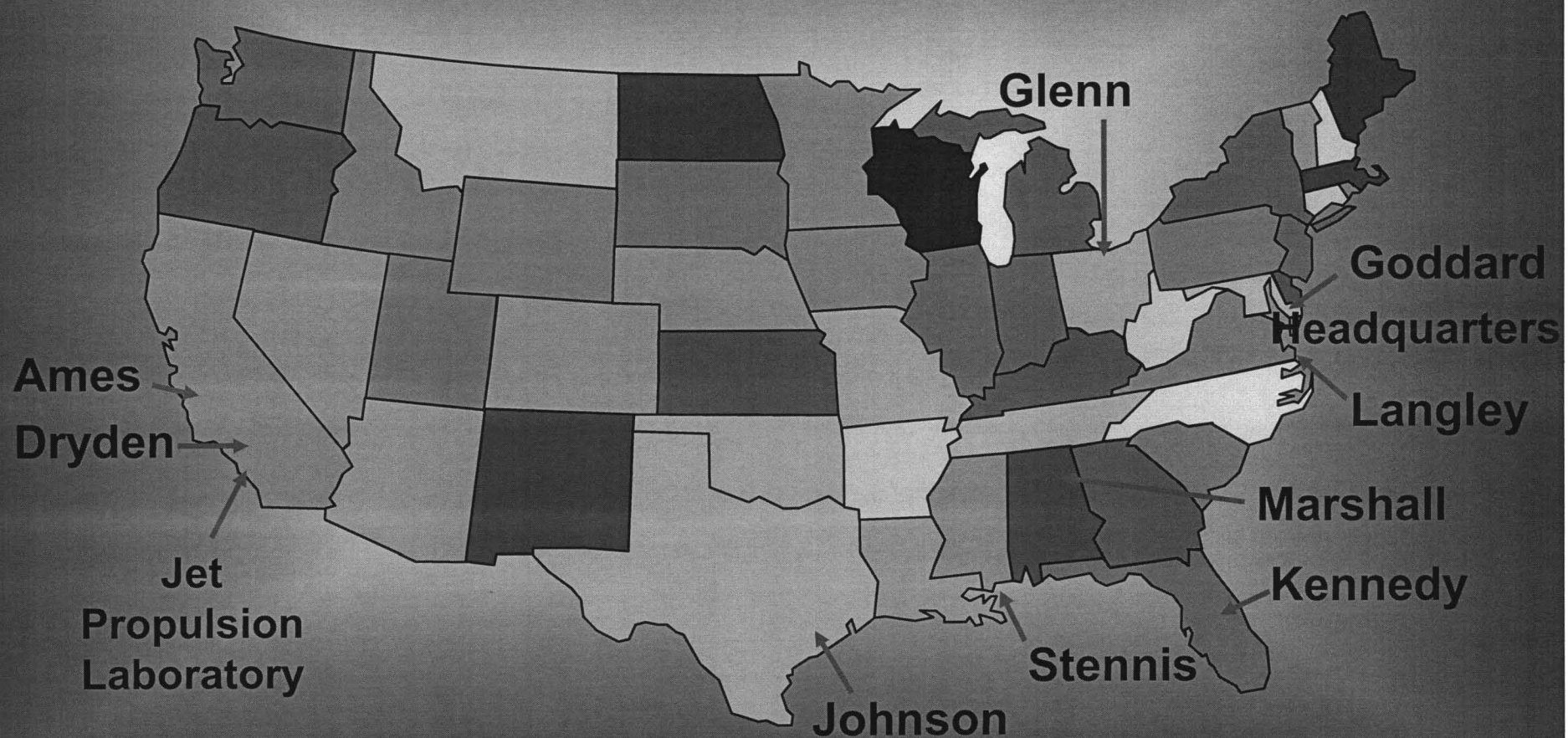
NASA SBIR/STTR Help Desk

REI Systems, Inc.
NASA SBIR/STTR Support Office
4041 Powder Mill Road
Suite 311
Calverton, MD 20705
301-937-0888
email: sbir@reisys.com





SBIR Participating NASA Centers





Additional Information

- The **NASA SBIR/STTR website** (<http://sbir.nasa.gov>) contains Solicitations and schedules, along with a wealth of related information. Documents and other information available include: prior award lists, technical abstracts, program statistics, procurement information, and links to state and private assistance organizations.
- The **SBIR/STTR Firm's Library** (https://sbir.gsfc.nasa.gov/sbir/firm_library/index.html) provides specific help in meeting proposal and contract requirements. The Firm's Library offers templates and samples of all potential Phase 1 and Phase 2 deliverables from proposal submissions through the life of the contract. Samples include: proposals, forms for proposals and contract negotiations, cooperative agreements (STTR), briefing charts, and reports. In addition, templates and samples for items such as business plans, briefing charts, and success story documentation are available.



Additional Information

- Contact information:
 - Brenda Penn
 - KSC Technology Infusion Manager
 - 321 861-3720
 - Brenda.a.penn@nasa.gov

- Jennifer Van Pelt
- SBIR/STTR Program Specialist
- 321/867-6374
- Jennifer.g.vanpelt@nasa.gov